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HIGH SOLAR REFLECTANCE COATING COMPOSITION

The present invention relates to improved elastomeric, exterior coating compositions, more specifically, elastomeric, exterior coating compositions having improved long term solar reflectance.

There is a growing awareness and concern over the "urban heat island" effect that is being created in cities. One of the major contributors to this effect is black roofs which strongly absorb solar energy from the sun. By putting a white coating on a roof, it is possible to significantly reduce the temperature of the roof and to greatly reduce the cooling requirements of the building. Obviously, the better the solar reflectivity and the longer the reflective life of the roof, the greater the benefit to the owner of the building and the community.

Many roofs are made of asphalt-based or rubber-based materials and these materials degrade with time (i.e. chalk, embrittle, etc.). By decreasing the amount of solar energy that is absorbed and the temperature of the roof, it is possible to slow the degradation rate and thereby extend the life of the roof.

By using a highly reflective roof coating, it is possible for architects and contractors to reduce the amount of insulation required under the roof of the building. This could represent a substantial cost savings and has already been incorporated into the Georgia Building Code. However, the solar reflectivity of conventional roof coating compositions degrades over time and the benefits of an initially high solar reflectivity are diminished.

U.S. Patent No. 5,688,853 discloses water-borne soil-resistant coatings. In particular, there is provided an aqueous coating composition comprising a blend of a low Tg aqueous polymeric dispersion and a high Tg aqueous polymeric dispersion characterized in that: the PVC of the coating composition as measured by opacity is less than the critical PVC, the polymeric dispersion with a low Tg has a Tg of less than 0°C, the polymeric dispersion with a high Tg is not film forming and has a Tg of at least 35°C and the volume ratio of low Tg polymer dispersion to high Tg polymer dispersion is from 0.4:1 to 1.4:1. As noted at col. 6, lines 50 - 64: "The relative proportion of the low and high Tg dispersions is most important to the working of the present invention and we require that the volume ratio of low Tg polymeric dispersion to high Tg polymeric dispersion to be